

## **REMARKS**

Claims 1 – 4 are pending and claims 5 – 6 are canceled. The rejections set forth in the Office Action have been overcome by amendment or are traversed by argument below.

Applicants thank the Examiner for her helpful comments regarding claim language, and have amended the pending claims in compliance therewith.

### **1. Rejection of drawings under 37 CFR § 1.83(a)**

The Examiner objects to the drawings as filed under 37 CFR § 1.83(a) as failing to show every feature of the invention specified in the claims. Applicant respectfully traverses this ground of rejection by noting that there is no requirement that each drawing show each and every element. Applicant submits that in combination the drawings show every feature of the invention specified in the claims.

Figure 13A shows the combination of an entry port and first channel as claimed in claim 1, communicating with the first chamber A as shown in Figure 13. In Figure 13A, B' – I' mirror B - I in Figure 13. Figure 13A shows a location where a first fluid chamber A in Figure 13 could be placed, specifically in the location of E in Figure 13A. In addition, Figure 13A shows a location where a first channel communicating with a first fluid chamber A may be placed, specifically the location of the metering capillary B in Figure 13A. Thus, a combination of Figure 13 and 13A show the combination of an entry port and first channel as claimed in claim 1 communicating with the first chamber A as shown in Figure 13. Support for the claim is found on page 8 line 14 – page 10 line 21. If the examiner has further suggestions how the drawings may be amended to overcome the rejection without introducing new matter, please notify the Applicant.

Applicant notes that Figure 13A shows all elements claimed in claims 3 - 4. Applicant respectfully suggests that the examiner may have overlooked Figure 13A as Applicant inadvertently placed Figure 13A out of order in the application, after Figure 14. Figure 13A discloses a combination of the fluidics structures shown in Figures 12 and 13 (page 19, lines 7 – 8).

Applicant further notes that Figure 13A shows how capillaries, such as F and G', may cross. Figures 11A through 11E show how the disk of the invention can be fabricated in layers. Applicant discloses that layers of varying thickness may be laid down on the disk in the form of channels, reservoirs, reaction chambers and other structures (page 46, line 29 – page 47, line 2). Figure 11D

shows how microchannels may be placed in distinct layers. Since microchannels may be located in distinct layers we teach a fabrication process where crossing of capillaries is possible.

In addition, Applicant discloses that a top layer comprising air vents, ports or shafts is applied in the fabrication of the disk of the invention (page 47, lines 12-13). Figures 11D and 11E show an exemplary embodiment of layer comprising air ports. Thus, we teach a fabrication process where a layer with air ports may be placed on top of the layers shown in Figure 12 – 13, providing an air displacement channel for each microchannel and fluid chamber. Therefore, Figures 11D and 11E, in combination with Figure 13, show how each of the microchannels and the fluid chambers may have an air displacement channel.

## **2. Rejections of claims 1 - 4 under 35 U.S.C. § 112, first paragraph**

Claims 1 - 4 stand rejected under 25 U.S.C § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Applicant respectfully traverses this rejection, with remarks organized by claim.

### **a. Claims 1 – 2**

Applicant notes, as above, that Figure 13A in combination with Figure 13, show how an inlet port and first channel could be connected to chamber A in Figure 13. Also, as noted above, Figures 11D and 11E, in combination with Figure 13, show how each channel and chamber would have an air displacement channel, as found at the end of claims 1 and 3. Support for claim 1 is found on page 8 line 14 – page 10 line 21. Claim 2 teaches a method for moving a fluid in a microsystem platform according to claim 1. Support for claim 2 is found on page 10 lines 14 – 21.

### **b. Claims 3 - 4**

Applicant notes, as above that Figure 13A, shows every element in claim 3. Applicant discloses that figure 13A can be a combination of example 2 and example 3 (page 19, lines 7- 8). Further support for claim 3 may be found on page 11 line 19 – page 14 line 16. Claim 4 teaches a method for moving a fluid in a microsystem platform according to claim 3. Further support for claim 4 may be found on page 14 line 19 – page 15 line 9.

### **3. Rejections of claims 1 - 4 due to formalities**

Claim 1 and claim 3 have been amended as suggested by the examiner. In claim 1, part h) line 1, and claim 3 part i), line 1, “second” has been changed to “third”. In claim 1, part h), line 6, and claim 3, part i), line 6, “second” has been changed to “first”. Applicant has reviewed the disclosure for additional errors as suggested by the examiner.

### **4. Rejection of claims 1 - 2 under 35 U.S.C. § 112, second paragraph**

Claims 1-2 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Applicant also notes that while claim 3 was not specifically rejected on this ground, the examiner detailed support for rejection of claim 3 on this ground. In claims 1 and 3, part c, Applicant does not intend “diameter” to be a limitation to round capillaries. Rather Applicant intends “diameter” to mean the internal dimension of the capillary, regardless of shape. Claims 1 and 3 have been amended to further overcome this ground of rejection, supported by following remarks.

Claims 1 and 3, part d, line 1 and the last line of claims 1 and 3 have been amended to denote the proper antecedent basis for the recited claim element. Support for this claim and the amendment thereto are found in Applicant’s specification at page 5, lines 21 – 28, page 11, line 28 – page 12 line 5.

Claim 3, part e, line 3 has been amended in compliance with the examiner’s suggestion to replace “the holding cell” with “the first fluid chamber”, to provide clear antecedent basis. Support for this claim and the amendment thereto are found in Applicant’s specification at page 12, lines 26 – 30.

Claim 3 part e stands rejected for lacking clear antecedence for “the junction”. Applicant respectfully submits that the claim provides adequate antecedence for “the junction”. “Junction” is used with its ordinary meaning, a place where two things join our meet (<http://dictionary.reference.com/search?q=junction>). Claim 3, part e specifies that a *capillary* junction is formed at the junction of each metering capillary and holding channel (now amended to be the first chamber) and the overflow capillary and the overflow chamber. Thus, this phrase means a *capillary* junction is formed where the metering capillary and the first chamber meet and where the overflow capillary and overflow chamber meet. “Capillary junction” is defined on page 19, lines 28 –

30.

**5. Prior Art**

Applicant acknowledges, without adopting, the examiner's characterization of the prior art.

**CONCLUSIONS**

Applicants believe that all grounds of rejection have been overcome by amendment, and request that the pending claims be passed to issue.

If Examiner Ludlow believes it to be helpful, she is invited to contact the undersigned representative by telephone at (312) 913-0001.

Respectfully submitted,  
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By: \_\_\_\_\_

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